



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

LOCAL ENTOMOLOGICAL NOTES.

Members of the New York Entomological Society and all others, are solicited to contribute to this column, their rare captures, local lists and other items of interest relating to the insect fauna of New York city and vicinity.

THE ODONATA OF NEW YORK STATE.

By PHILIP P. CALVERT, Philadelphia, Pa.

The object of the present paper is to extend our knowledge of the distribution of the dragonflies in New York State, by recording collections made by several persons, and by bringing together such data as have been previously published.

The literature treating of the New York Odonata exclusively, consists, as far as the writer is aware, of the following articles.

E. Emmons: Agriculture of New York, etc., . . . together with descriptions of the more Common and Injurious Species of Insects. Vol. V, Albany: Printed by C. Van Benthuysen. 1854. (Being part of the Natural History of New York published by Authority). The Odonata are briefly referred to as the Libellulidæ on pp. 184—185, and illustrated in colors on plate 15. No explanation of these figures is given, other than that fig. 5 represents *Libellula pulchella* Drury, fig. *f* its larva and fig. 4 perhaps a variety. When I visited Cambridge in July, 1890, Dr. Hagen showed me a copy of this work in which he had identified these figures as follows. Fig. 1. *Cordulia* (*Somatochlora*) *Lintneri* Hag. ♂. Fig. 2. *Gomphus brevis* Hag. ♂. Fig. 3. *Anax junius* Dru. ♂. Fig. 4. *Plathemis trimaculata* De Geer ♂, Fig. 5 id. ♀.

W. Beutenmüller: in Dragonflies vs. Mosquitoes (The Lam-born Prize Essays), New York, D. Appleton & Co., 1890, gives on pp. 163—164, a Preliminary Catalogue of the Odonata found in the State of New York. It consists of only names of 50 species, those found in the vicinity of New York City being marked with an asterisk. This catalogue is referred to below as (Be).

N. Banks: The Odonata of Ithaca, N. Y., in the Canadian Entomologist, xxvi, pp. 76—78. March, 1894. Forty-eight species from Ithaca and other localities are mentioned, with brief notes. Quoted below as (B).

W. T. Davis: Two additions to the local list of dragonflies in

Proceedings of the Natural Science Association of Staten Island, iv, pp. 52—53. December 8, 1894. (D).

A number of species are recorded from New York in papers of a more general scope, as mentioned below.

For the collections which are now first recorded, the writer is indebted to —

Mr. J. Percy Moore, who gave specimens from Lake St. Regis, Franklin Co., and Hotel Champlain, taken in September, 1890, quoted below as (M);

Mrs. A. T. Slosson, who sent dragonflies from various localities, as indicated by (S1);

Mr. G. D. W. Williamson, who made collections at Dobb's Ferry in 1888 (W);

Mr. W. Sheraton, who collected in Keeseville, Essex Co., in 1894 (S).

A few specimens taken by the writer at Saratoga Lake in August, 1889, are included (C).

Finally, some data are derived from the collections of the American Entomological Society (A. E. S.)

Mr. Sheraton also sent some notes on the general character of the localities near Keeseville at which his collections were made, and which are here reproduced.

"As to the dragonflies, they were all obtained along a section, of the length of about a mile, of a small and rather sluggish brook flowing from Auger Lake by an extremely circuitous and tortuous course to the Au Sable river. The section in which the collecting was done includes, first a rough pasture field, the brook in this part being pretty thickly bordered on one side by alders, so that collecting was chiefly confined to the opposite bank, near which there were also several large holes from which clay for brick-making was formerly dug. These are now full of stagnant water, and abound in animal and plant life. All my collecting was done here (locality 1), except the last two days, which were devoted to the part of the brook below this. At the lower end of this first portion, the brook passes under a bridge into "locality 2", where it is bordered by hay-fields at first, then by rough pasture land. One day [Aug. 10] was devoted to this portion, and one [Aug. 16] to "locality 3" which follows it, and is bordered entirely by hay-fields. Of these three divisions 2 and 3 are practically identical in character and in species observed, but

I found them to differ considerably from "locality 1", 1st, in the much greater abundance of the form marked No. 31 [*Heterina americana*], and 2nd, in the absence of many forms found in locality 1, especially of the larger forms as No. 14 [*Libellula pulchella*]. The difference, I imagine, was chiefly, if not entirely, due to the presence in locality 1 of the clay-holes. Had my health been better than it was this summer, and the weather less intensely hot, I might have visited a number of other localities, and obtained, I think, a better collection. One thing that struck me rather forcibly was the fact that in the summer of 1893, when I was around the brook to some extent for other purposes, a large dragonfly with body of a brilliant metallic green was very numerous and conspicuous along the whole length at least of locality 1, while this year, with the exception of a single specimen which I think I saw one day when out driving, they were absolutely lacking wherever I went. Another thing that I noticed is that the larger dragonflies seldom make their appearance as early in the morning as the smaller forms, these latter being quite numerous between 9 and 10 of a bright morning, while the big ones, or at least those marked 12 and 14 [*Libellula pulchella*], seldom appeared until near 11 in the part where I was collecting. I was unable to procure any immature forms".

The list of species derived from all the sources above mentioned comprises 85, if not 86, species. The aim has been to give the precise locality in each case. Where this is not possible, and merely the State can be quoted, the place of original record has been given. Species not previously mentioned as from this State in the above cited papers, or in the catalogues of American Odonata of Hagen 1875 and of Banks 1893, are marked by an asterisk (*). The arrangement of the species is the same as in the writer's Catalogue of the Odonata of the vicinity of Philadelphia (Trans. Am. Ent. Soc. xx, pp. 219—272, 1893), in which the majority of the following species are described.

Subfamily CALOPTERYGINÆ.

1*Calopteryx maculata* Beauvois.

One male, Keeseville, June 9, 1894. "Seemed very rare. The only specimen I obtained was picked out of the grass by the brook, in a limp condition, when the grass was wet. I never again saw this form, except a few times in June, flying about the grounds of

'Clawbonny'. when no net was at hand" (S). Westchester Co., New York (Be). Ithaca, common about streams in spring and summer (B).

*2. **Calopteryx æquabilis** Say.

Keeseville, one female, Aug. 4, 1894.

3. **Calopteryx dimidiata** Burm., race **apicalis** Burm.

Westchester Co., New York (Be).

*4. **Calopteryx amata** Hagen.

One male, Keene Valley, Essex Co., July 4, 1890, N. Y. St. Coll., sent to me for identification by Dr. Lintner, apparently belongs here, but differs from Hagen's description (*Psyche*, v, p. 244) as follows: General color brassy green instead of brassy blue; the small yellow band on the side of the thorax is on the second instead of the first suture; wings 7 mm. wide at nodus, instead of 9 mm; 7-8 quadrilaterals.

5. **Hetærina americana** Fabr.

Keeseville, three males, six females, Aug. 10, 16, 1894 (S). Ithaca, one specimen (B).

Subfamily AGRIONINÆ.

6. **Lestes eurina** Say.

Dobb's Ferry, three males, July 7, 10, 23, 1888 (W).

7. **Lestes congener** Hagen.

Lake St. Regis, one male, two females, Sept. 22, 1890 (M).

8. **Lestes unguiculata** Hagen.

Westchester Co., New York (Be).

9. **Lestes uncata** Kirby (*forcipata* HAGEN 1861, *hamatæ* SELYS 1862).

Keeseville, one female, July 26, 1894. Ithaca, uncommon, August (B).

10. **Lestes disjuncta** Selys.

Lake St. Regis, one male, Sept. 22, 1890 (M). Keeseville, six males, eight females, July 26—August 4, 1894 (S). Ithaca, uncommon, August (B).

11. **Lestes forcipata** Rambur (*hamata* HAGEN, 1861).

New York City (Be). Ithaca, not comon, June (B).

12. **Lestes rectangularis** Say.

Dobb's Ferry, three males, one female, July 10, 23, 1888 (W). New York City (Calverley—Hagen 1861). Ithaca, common during July and August (B). Saratoga Lake, Aug. 15, 1889 (C).

13. **Argia putrida** Hagen.

Niagara, one male (Sl). Ithaca, common, summer (B).

14. **Argia violacea** Hagen.

Keeseville, eleven males, July 6, Aug. 1, 4, 1894 (S). Dobb's Ferry, July 7 to Aug. 15, 1888 (W). Ithaca, common, July (B).

15. **Argia bipunctulata** Hagen.

"New York", Banks, Trans. Am. Ent. Soc., Vol. xix, p. 349.

16. **Erythromma conditum** Hagen.

Ithaca, one specimen (B).

17. **Nehalennia irene** Hagen.

Ithaca, uncommon, July (B). No specimens of *N. posita* appear to have been recorded from his State, although it most probably occurs.

18. **Amphiagrion saucium** Burm.

Westchester Co., New York (Be). Ithaca, one specimen (B).

19. **Enallagma cyathigerum** Charp., var. **annexum** Hag.

Keeseville, one male, June 12, 1894. Ithaca, two specimens, August (B).

20. **Enallagma civile** Hagen.

Saratoga Lake, eight males, two females, Aug. 15, 1889 (C), see. Trans. Am. Ent. Soc., Vol. xx, p. 237.

21. **Enallagma** sp. n.

Niagara, two males, one female (Sl).

22. **Enallagma ebrium** Hagen.

Keeseville, thirteen males, eight females, June 9 to July 31, 1894 (S). Ithaca, two specimens (B). Catskill Mts., one male (A.E.S.).

23. **Enallagma Hageni** *Walsh*.

"A specimen in the Cornell Univ. collection is probably this species" (B).

24. **Enallagma traviatum** *Selys*.

Long Island, one specimen (B).

25. **Enallagma aspersum** *Hagen*.

Dobb's Ferry, four males, July 7, 10, 1888 (W). New York (Be).

26. **Enallagma divagans** *Selys*.

Long Island (B).

27. **Enallagma exsulans** *Hagen*.

Keeseville, abundant, June 12—Aug. 10, 1894 (S). Saratoga Lake, Aug. 15, 1889 (C). Ithaca, quite common, July, August (B).

28. **Enallagma signatum** *Hagen*.

"New York", Banks, Trans. Am. Ent. Soc., Vol. xix, p. 350.

29. **Ischnura verticalis** *Say* (*Ramburii* HAGEN, 1861).

Niagara (Sl.). Keeseville, abundant, June 9—Aug. 10, 1894 (S). Dobb's Ferry, July 7, 10, 1888 (W). Saratoga Lake, Aug. 15, 1889 (C). New York (Be). Ithaca, common, July, August (B).

30. **Ischnura Ramburii** *Selys*. (*iners* HAGEN, 1861).

"New York" (Hagen, 1861).

31. **Anomalagrion hastatum** *Say*.

Keeseville, one *black* female, July 31, 1894 (S). New York (Be).

Subfamily GOMPHINÆ.

32. **Tachopteryx Thoreyi**

"Environs de New York" (Selys, Mon. Gomph., p. 375).

33. **Hagenius brevistylus** *Selys*.

"New York — Dr. Asa Fitch" (Hagen, 1861). A specimen in the Cornell Univ. collection (B). Westchester Co. (Be).

34. **Ophiogomphus rupinsulensis** *Walsh*.

Ithaca, two specimen (B).

35. **Gomphus parvulus** *Selys*.

Ithaca, one specimen (B).

36. **Gomphus brevis** *Hagen*.

"Schoharie, le male pris par M. Lintner" (Selys, Bull. Ac. Belg. — 2 — xlv, p. 464, 1878). Emmons, *l. c. supra*, pl. 15, f. 2.

37. **Gomphus exilis** *Selys*.

Keeseville, one male, June 6, 1894 (S). Ithaca, quite common in June and July (B).

38. **Gomphus spicata** *Hagen*.

"Un male pris à New-York par M. Schaum" (Selys Mon. Gomph., p. 155, 1858). "New York, d'après un male adulte envoyé par M. Asa Fitch" (id., p. 414).

39. **Gomphus fraternus** *Say*.

Ithaca, one specimen (B).

40. **Gomphus adelphus** *Selys*.

Bethlehem, Albany Co., June 17 (Selys, Bull. Ac. Belg. — 2 — xlv, p. 457).

41. **Gomphus villosipes** *Selys*.

Ithaca, not uncommon (B).

42. **Gomphus vastus** *Walsh*.

"New York" (Hagen 1875). Banks also mentions a female in the Cornell Univ. collection, of a species of *Gomphus* unknown to him.

43. **Dromogomphus spinosus** *Selys*.

Ithaca (probably), Baldwinsville by Mr. R. H. Pettit (B).

Subfamily CORDULEGASTERINÆ.

*44. **Cordulegaster diastatops** *Selys*.

"New York", three males (A. E. S.)

Sub-family AESCHNINÆ.

45. **Epiæschna heros** *Fabr.*

Dobb's Ferry, one female, Aug. 10, 1888 (W). New York, common (Be). Ithaca, in Cornell Univ. collection, June (B).

46. **Fonscolombia vinosa** *Say*.

Keeseville, one female, July 30, 1894, kitchen at 'Clawbonny' (S). Ithaca, one specimen, July 29 (B). Westchester Co. (Be).

*47. **Basiaeschna janata** *Say*.

Keeseville, one male, June 9, 1894 (S).

48. **Aeschna juncea** *L.*, var. **verticalis** *Hagen*.

"New York" (Be).

49. ***Aeschna clepsydra*** Say.

Lake St. Regis, Sept. 5 to 22, 1890, abundant (M). Ithaca, uncommon, August (B). Catskill Mts., two males, Aug. 28, by E. M. Aaron (A. E. S.).

50. ***Aeschna constricta*** Say.

Hotel Champlain, one male, Sept. 21, 1890 (M). Watkin's Glen, one male (Sl.). Dobb's Ferry, Aug. 24, Sept. 14, 1888 (W). New York City (Be). Ithaca, common during July and August (B). Catskill Mts., one male, one female, Aug. 28, by E. M. Aaron (A. E. S.).

51. ***Anax junius*** Drury.

Ithaca, common during summer (B). Emmons, pl. 15, f. 3. Vicinity of N. Y. City, common (Be).

Subfamily CORDULINÆ.

52. ***Didymops transversa*** Say.

Keeseville, one male, June 9, 1894 (S). Ithaca, uncommon, June, July (B).

53. ***Epicordulia princeps*** Hagen.

Ithaca, in Cornell Univ. collection, June (B).

54. ***Tetragoneuria cynosura*** Say.

Ithaca, common in the spring (B). Lake George, one male (A. E. S.).

55. ***Tetragoneuria semiaquea*** Burm.

Ithaca (probably), Baldwinsville by Mr. Pettit (B).

56. ***Neurocordulia Uhleri*** Selys.

"New York" (Be).

57. ***Somatochlora elongata*** Scudder.

Ithaca, one specimen in Cornell Univ. collection, June (B).

58. ***Somatochlora tenebrosa*** Say.

"New York" (Be).

*59. ***Somatochlora libera*** Selys.

Catskill Mts., two females (A. E. S.).

60. ***Somatochlora lepida*** Selys.

Albany (Selys, Bull. Ac. Belg. — 2 — xxxi, p. 265, 1871).

61. ***Somatochlora Lintneri*** Hagen.

Center, four males, four females, May 27, 21 by Mr. J. A. Lintner (Hagen, Psyche, Vol. v, p. 373, 1890). Emmons, pl. 15, f. 1.

Subfamily LIBELLULINÆ.

62. **Tramea carolina** *Linn.*
Vicinity of New York City (Be). Not common.
63. **Tramea lacerata** *Hagen.*
Freeville, two specimens, May 31, 1889 (B).
64. **Libellula basalis** *Say.*
Dobb's Ferry, July 13, 1888 (W). Ithaca, uncommon, Aug. (B).
65. **Libellula auripennis** *Burm.*
Vicinity of New York City (Be).
66. **Libellula plumbea** *Uhler.*
Westchester Co., New York (Be).
67. **Libellula cyanea** *Fabr. (quadrapla SAY.)*
Vicinity of New York City (Be).
68. **Libellula axillena** *Westw.*, form **vibrans** (*Fab.?*) *Kirby.*
Staten Island (D), Westchester Co. (Be).
- *69. **Libellula exusta** *Say.*
Lake George, one male (A. E. S.).
70. **Libellula quadrimaculata** *Linn.*
Vicinity of New York City (Be). Ithaca, a few specimens in the Cornell Univ. collection (B).
71. **Libellula semifasciata** *Burm.*
Dobb's Ferry, July 13, 1888 (W). Vicinity of New York (Be). Common.
72. **Libellula pulchella** *Drury.*
Keeseville, three males, two females, July 4—Aug. 4, 1894, very difficult to catch though numerous (S). Dobb's Ferry, June, July 7 (W). New York City (Be). Ithaca, common during spring and summer (B).
73. **Plathemis trimaculata** *De Geer.*
Dobb's Ferry, June (W). New York City and vicinity (Be). Ithaca, common during spring and summer (B). Emmons, pl. 15, f. 4 (♂), 5 (♀), f (larva).
74. **Micrathyria berenice** *Drury.*
Thousand Isles, one male (Sl). Vicinity of New York City (Be). Common.

75. **Nannothemis bella** Uhler.

Westchester Co., New York City (Be).

76. **Celithemis elisa** Hagen.

Long Island, New York (Be). Ithaca, one specimen by Prof. Morgan (B).

Celithemis ornata RAMBUR is to be looked for.

77. **Celithemis eponina** Drury.

Westchester Co., New York (Be). Not common.

78. **Leucorhinia intacta** Hagen.

Keeseville, ten males, July 4, 31, 1894 (S). Ithaca, not uncommon in the spring (B). Westchester Co. (Be).

79. **Diplax rubicundula** Say.

Lake St. Regis, two females, Sept. 14, 1890 (M). Keeseville, one male, July 4, one female, July 26, 1894 (S). Dobbs Ferry, July 13, 1888 (W). Vicinity of New York City (Be). Ithaca, common during spring and summer (B).

Diplax obtrusa HAGEN probably lives in New York.

80. **Diplax semicincta** Say.

Ithaca, uncommon, August (B). Staten Island (D), Westchester Co. (Be).

81. **Diplax costifera** Hagen.

"New York" (Hagen, 1875).

82. **Diplax vicina** Hagen.

Lake St. Regis, six males, five females, Sept. 17, 22, 1890 (M). Keeseville, three males, four females, July 26—Aug. 4, 1894 (S). Saratoga Lake, Aug. 15, 1889 (C). Vicinity of New York (Be). Ithaca, not uncommon, July, August (B). Dobb's Ferry, Nov. 8, 1892 (W). Catskill Mts., one male, Aug. 28, by E. M. Aaron (A. E. S.).

83. **Perithemis domitia** Drury.

Westchester Co., New York (Be).

84. **Mesothemis simplicicollis** Say.

New York City, Westchester Co. (Be). Ithaca, one specimen by Mr. O. Takahashi (B).

85. **Pachydiplax longipennis** Burm.

Dobb's Ferry, July 7, 1888 (W). New York City, Westchester Co. (Be). Ithaca, common during spring and summer (B).